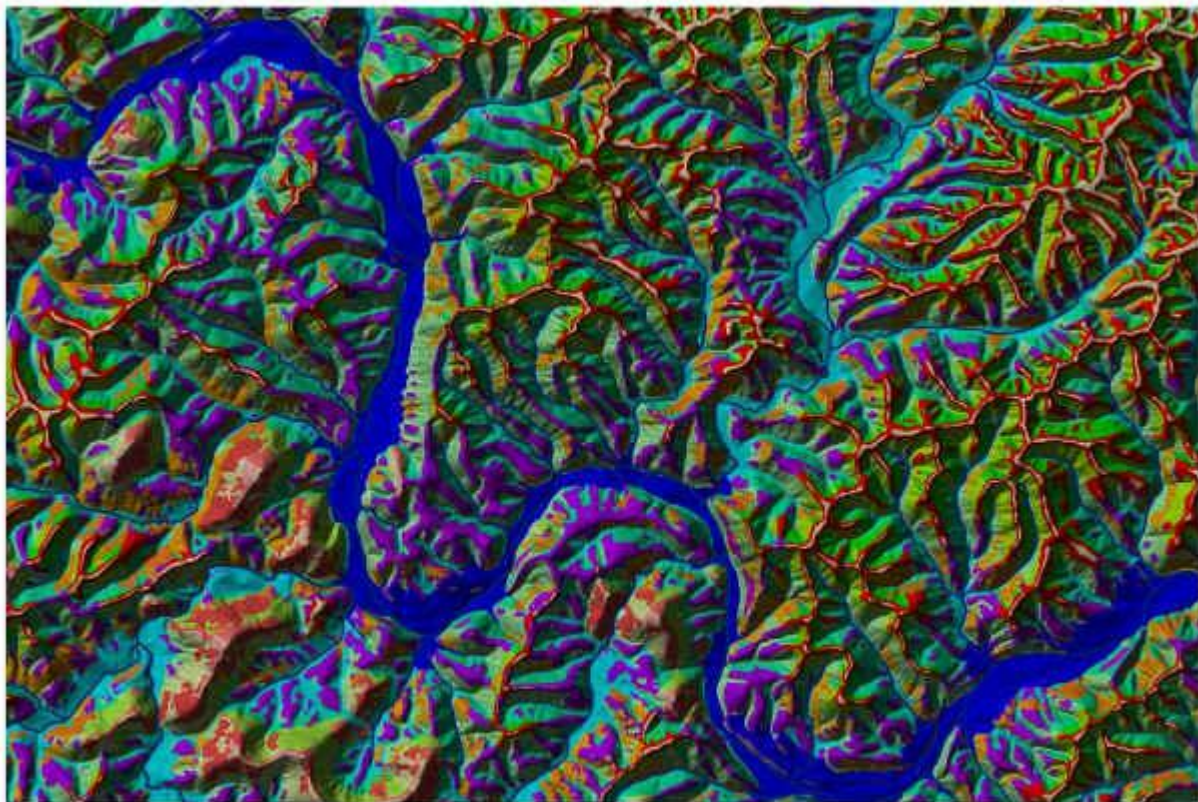


## Ecological Classification System Project - Progress October 2000

*Tim Nigh, MDC*

Activities in the ECS realm during 2000 have centered around documentation and application. We have been successfully taking the system to the field with good results. Specific products and activities are listed below.

ELT Manual and workshops in the Current River Hills. A working draft of the ELT manual for the Current River Hills was completed in June. We held two workshops for local resource managers and researchers and distributed all 75 copies of the manual. Initial reactions to the system are very positive. ELTs and LTAs are being used by managers from MDC, USFS, TNC and NPS in the region for resource assessment, planning, monitoring and management. We have asked participants to test the manual over the next 8 months, and we will ask for review comments before final printing next year. Another round of workshops will take place next spring. Contact Nigh at email below if you are interested.



An Ecological Landtype Model in Current River Hills at Powder Mill Ferry

Peck Ranch Area Management Plan. The area Plan for Peck Ranch, a 22,000 acre conservation area in Carter county, was completed using ECS as a framework for assessing resource status and setting management objectives. This approach seemed to make integration of forestry, fisheries, wildlife, natural history and education/recreation values easier. The plan is being distributed as a model for ecologically based

planning. Monitoring of pine woodland restoration at Peck was also stratified by ELT this summer. A similar planning effort for Rocky Creek CA in Shannon county is being initiated this month.

ELT Model for the Current River Hills Subsection. A GIS generated model of ELTs for the entire CRH subsection was completed in September. We built a 10 meter DEM from contour DLGs available for over 75 1:24000 scale topographic maps. We also edited and incorporated both 1:24K and 1:100k stream networks into the DEM generation. Landforms were derived from the DEM using slope, curvature, elevation and aspect terrain attributes. A geology layer was created from new USGS 1:100K coverages as well as several 1:24 K coverages. From these layers, geo-landforms were derived, then lumped into ELTs. Finally, ELTs were lumped into ELT Natural Community Management Groups, or units with similar potential natural vegetation. These coverages provide an initial model of ecological units for the entire subsection for use by planners and managers in the region. See a piece of the model in the figure accompanying this report.

Ozark Highlands Ecoregion Assessment. We are participating in ecoregional planning being carried out by TNC and in an overall assessment of the region being piloted at MoRAP. Both efforts use ecological subsections as a principal assessment strata and LTAs to help guide identification of primary conservation targets in each subsection. Again the system appears to provide a meaningful framework for assessing resource status and setting priorities.

Ecoregion Mapping. Missouri has taken several important steps toward a common set of ecological regions that will meet state and national needs. Pending drafts of the USEPA's Level III & IV Ecoregions of Missouri and USDA's revision of Missouri's Major Land Resource Areas strongly complement the state's efforts through the Missouri Ecological Classification Project (MECP) to attain commonality and consistency in an ecological framework.

Ecological regions are characterizations of ecosystem patterns, identified through a classification process that captures the spatial distribution of relatively homogeneous landscape areas at specific scales. (Bailey, 1995; Omernik, 1995) Ecoregions are intended to serve as a spatial framework for research, inventory, assessment, monitoring and management of the natural resource base. At the national level, there are three widely accepted ecoregion type classification systems. Each is based on a unique conceptual approach and mapping methodology. The Natural Resources Conservation Service's Major Land Resource Area (MLRA) system focuses on agricultural potential and soil capabilities. MLRA's are used to address national, regional and state agricultural research and conservation program issues. The United States Forest Service's National Hierarchical Framework of Ecological Units is based on Robert Bailey's ecological classification system and guides ecologically driven resource management on National Forest System lands. The United States Environmental Protection Agency's Ecoregion Mapping program, based on James Omernik's ecological classification system, places added emphasis on a framework that supports regulatory programs. The federal agencies involved in natural resource management have signed a Memorandum of Understanding that encourages Federal and State interagency efforts toward a common set of ecological units for the United States.

Working toward this goal, Missouri interagency teams have compiled a final draft for the USEPA's Ecoregions of Missouri and a revised NRCS' MLRA Map of Missouri based on MECP's land type association boundaries (LTA's). Although the hierarchical structure of the MECP classification system is a derivative of Bailey's system, the unit compositions are a synthesis of the concepts inherent in the USDA, USFS and EPA systems. This synthesis has made it possible to combine LTA units into acceptable EPA Ecoregion Levels and NRCS MLRA's. While the final boundaries for both maps will be smoothed by USEPA and NRCS to meet each agency's national mapping protocols



and unit names will differ, Missouri's three ecoregion maps will share a common origin and strongly complement each other.

The interagency effort to compile the USEPA Ecoregions was organized and led by the Missouri Department of Natural Resources, Division of Environmental Quality, Environmental Services Program.

The Missouri Natural Resources Conservation Service, Resource Inventory and Assessment Team led the interagency team for the USDA MLRA Map revision. Agencies contributing to these efforts included the Missouri Department of Conservation, the Missouri Department of Natural Resources, the United States Forest Service, the Natural Resources Conservation Service, the United States Environmental Protection Agency, the University of Missouri, Department of Geography and the Missouri Resource Assessment Partnership.

#### Literature Cited:

Bailey, R. G., 1995. Descriptions of the Ecoregions of the United States, 2<sup>nd</sup> edition. Miscellaneous Publication No. 1391, U. S. Department of Agriculture, Forest Service, Washington D. C., 108 pp.

Omernik, J. M., 1995. Ecoregions: A Spatial Framework for Environmental Management. In Biological Assessment and Criteria: Tools for Water Resource Planning and Decision Making, W. S. Davis and T. P. Simon, eds., Lewis Publishers, Boca Raton, FL, 49-62.

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